UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,860	02/20/2004	Jesus Belda Pla	2810-1-001	7595

23565 7590 03/15/2007

KLAUBER & JACKSON
411 HACKENSACK AVENUE
HACKENSACK, NJ 07601

EXAMINER	
AZARIAN, SEYED H	
ART UNIT	PAPER NUMBER
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/783,860	PLA ET AL.	
	Examiner	Art Unit	
	Seyed Azarian	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,10,11,14-19,22,27,29,31,34,36,37,40,41,43 and 44* is/are rejected.

7)☒ Claim(s) *5,8,9,12,13,20,21,23-26,28,30,32,33,35,38,39 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because the blank boxes in figures 1-7, lack description. Because it is difficult to ascertain what blank boxes are without having to dig through the specification, it is respectfully requested that these figures merely be provided with some simple description so that attorneys, examiners, and the public in general will be provided with a quicker way to search and a clearer patent disclosure. This benefits everyone.

Applicant is required to submit a proposed drawing correction in reply to this Office action. Failure to timely submit the proposed drawing correction will result in the abandonment of the application. The objection to the drawing will not be held in abeyance.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-7, and 10-11, 14-16, are rejected under 35 U.S.C. 102(b) as being anticipated by Sanchez-Revuelta et al (U.S. patent 5,808,906).

Regarding claim 1, Sánchez-Revuelta discloses a system for recognizing wheels by artificial vision comprising: wheel locating means, first image capturing means, first lighting means, first control means comprising (column 2, lines 6-30, a wheel-position and capturing the image, generated by said planner beam of light);

first communicating means for communications between the first control means and the first image capturing means (column 2, lines 15-22, the image captured by camera sends (communication) the measurement to a central control);

second communicating means for communications between the first control means and the first lighting means (Fig. 3, column 4, lines 9-20, a controller 10 for illuminating and capturing image);

wherein, the first image capturing means and the first lighting means are arranged above the wheel locating means so as to enable the first image capturing means to capture a front image of a wheel to obtain a captured front image (Fig.1 column 3, lines 40-61, the installation of the invention outermost part of the wheel which it is desired to measured);

the first communicating means sends said front image to the first control means; the first control means processes said front image to obtain data for identifying a wheel model (column 3, lines 40-62, for measuring the profile of the wheel, such as wheel-rim, width, part (refer to wheel identifying).

Regarding claim 2, Sanchez-Revuelta discloses a system according to claim 1 wherein the first control means further comprises, first filtering means for filtering a captured front image to obtain a first filtered front image (column 3, lines 56-59, image

capture by a camera 6, and filter is send to be analyzed to high-resolution artificial-vision electronic profile);

first transforming means for converting a circular portion of the first filtered front image into a rectangular portion to obtain a transformed front image (column 3, lines 56-62, image capture by a camera 6, and filter is send to be analyzed to high-resolution artificial-vision electronic profile, also column 5, lines 1-20, measuring diameter of the wheel and display monitor);

second filtering means for filtering a transformed front image to obtain a second filtered image, recognizing means for receiving an identification of a recognized wheel (column 4, lines 9-38, to obtained a high level of precision in the measurement and comparison).

Regarding claim 3, Sanchez-Revuelta discloses a system according to claim 1 further comprising, second image capturing means; second lighting means, third communicating means for communications between the first control means and the second image capturing means; fourth communicating means for communications between the first control means and the second lighting means, wherein the second image capturing means and the second lighting means are arranged on a side of the wheel locating means so as to enable the second image capturing means to capture a side image of a wheel to obtain a side captured image, the third communicating means sends said side image to the first control means; the first control means processes said side image to obtain data for identifying a wheel model (column 4, lines 9-20 the measurement, using the camera and the laser generators, controller 10 for illumination

and capturing image server to synchronize (different communication) the acquisition of the images to analyzed and send to the central control computer and visualization).

Regarding claim 6, Sanchez-Revuelta discloses a system according to claim 1 further comprising second control means external to the first control means, wherein the first control means further comprises sixth communicating means for communications between the first control means and the second control means (column 4, lines 9-44 the measurement, using the camera and the laser generators, controller 10 for illumination and capturing image server to synchronize (different communication) the acquisition of the images to analyzed and send to the central control computer and visualization).

Regarding claim 10, Sanchez-Revuelta discloses a system according to claim 6 wherein the second control means further comprises at least one controller selected from, a production machine controller, an assembly machine controller, a production line controller, an assembly line controller, and combinations thereof (column 1, lines 7-27, a reproduction of profile of the wheel and comparing to standard profile, also column 2, lines 44-60, refer to production).

Regarding claim 14, Sanchez-Revuelta a system according to claim 10 wherein the first control means further comprises calibrating means to set standard wheel models which the wheel to be recognized are compared to (column 1, lines 7-27, a reproduction of profile of the wheel and comparing to standard profile).

With regard to claims 4, 7 and 11, the arguments analogous to those presented above for claims 1, 3, 6 and 10 are respectively applicable to claims 4, 7 and 11.

With regard to claims 15 and 16, the arguments analogous to those presented above for claims 1 and 14 are respectively applicable to claims 15 and 16.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 17-19, 22, 27, 29, 31, 34, 36-37, 40-41 and 43-44, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanchez-Revuelta et al (U.S. patent 5,808,906) in view of Sakoh et al (U.S. patent 6,704,593).

However regarding claim 17, Sanchez-Revuelta does not explicitly state it's corresponding "for converting a circular portion of an image into a rectangular image". On the other hand Sakoh teaches (see Fig. 11(a), column 17, lines 38-55 the circular image, the diameter of the circular image should be matched with a length of a shorter side of the light detecting surface or smaller than the sorter side. Inevitably, there remains a useless space in the four corners and at the right and left side of the light-detecting surface).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sanchez-Revuelta invention according to the teaching of Sakoh because it provides information associated with an image storage

and image processing as well as image compression and image improvement in reproduction process, which can easily be implemented in an images device such as artificial vision.

Regarding claim 22, Sanchez-Revuelta discloses a process according to claim 18 wherein the recognized wheel takes a value selected between: valid wheel when the second filtered image and the pre-set standard wheel model are matched, defective wheel when the second filtered image and the pre-set standard wheel model are not matched (see claim 1, also column 1, lines 1-26, a reproduction of profile of the wheel and comparing to standard profile).

Regarding claim 27, Sanchez-Revuelta discloses a process according to claim 18 wherein the second filtering stage comprises applying a plurality of filters for enhancing transformed image parameters selected from at least one of quality, contrast, framing, focusing and combinations thereof (column 3, lines 40-61, high-resolution artificial-vision electronic equipment).

Regarding claim 37, Sanchez-Revuelta discloses a process according to claim 17 further comprising a second calibrating stage for calibrating dimensions of a standard wheel model comprising: pointing to minimum radius and maximum radius of the standard wheel model; zooming to an image defined by said minimum radius point and maximum radius point; introducing a standard wheel model diameter (column 1, lines 3-16, high precision measurement of rolling "parameters", thickness and height of the flange of the wheel, qR factor, diameter of the wheel and distance, of profile of the wheel is generated, making it possible to compare it with other standard profiles).

With regard to claims 18-19, the arguments analogous to those presented above for claims 1, 10, 14 and 17 are respectively applicable to claims 18-19.

With regard to claims 29, 31, 34 and 36, the arguments analogous to those presented above for claims 1, 17 and 27 are respectively applicable to claims 29, 31, 34 and 36.

With regard to claims 37, 40-41 and 43-44, the arguments analogous to those presented above for claims 1, 17, 27 and 37 are respectively applicable to claims 37, 40-41 and 43-44.

Allowable Subject Matter

5. Claims 5, 8-9, 12-13, 20-21, 23-26, 28, 30, 32-33, 35, 38-39 and 42, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Other prior art cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(U.S. patent 7,065,462) to Merrill et al is cited for vehicle wheel alignment by rotating vision sensor.

(U.S. patent 7,089,099) to Shostak et al is cited for sensor assemblies.

(U.S. patent 7,058,494) to Matsumoto et al is cited for vehicle dynamics control apparatus.

(U.S. patent 6,474,434) to Bech is cited for drive wheel).

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.
Status information about the PAIR system, see http:// pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seyed Azarian
Patent Examiner
Group Art Unit 2624
March 13, 2007